NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

PRESCRIBED GRAZING

(Acre)

Code 528

DEFINITION

Managing the controlled harvest of vegetation with grazing animals.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes. If multiple purposes are desired, apply the strictest criteria outlined for the desired purposes.

- Improve or maintain the health and vigor of plant communities.
- Improve or maintain quantity and quality of forage for livestock health and productivity.
- Improve or maintain water quality and quantity.
- Reduce accelerated soil erosion and maintain or improve soil condition.
- Improve or maintain the quantity and quality of food and/or cover available for wildlife.
- Promote economic stability through grazing land sustainability.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to all lands where grazing animals are managed.

CRITERIA

General Criteria Applicable for all Purposes

Removal of herbage will be in accordance with site production limitations, rate of plant growth, and the physiological needs of forage plants. {See Forage Suitability Group (FSG) Table in Section I of the Technical Guide, Chapter 6 of the National Range and Pasture Handbook, and Table 1 of Appendix}.

Manage kind of animal, animal number, grazing distribution, length of grazing periods, and timing of use to provide sufficient deferment from grazing during the growing period (See graze.xls program).

Protect soil, water, air, plant, and animal resources when locating livestock feeding, handling, and watering facilities.

Manage grazing animals to maintain adequate vegetative cover on sensitive areas (i.e., riparian, wetland, habitats of concern, karst areas). Rotate livestock before the most sensitive resource is impacted.

A minimum of two pastures or paddocks is needed to apply prescribed grazing. Livestock may be moved from one tract to another to allow rotation and rest of forage.

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Additional Criteria to Improve or Maintain the Health and Vigor of Plant Communities

Duration and intensity of grazing will be based on desired plant health and expected productivity of key forage species to meet management unit objectives.

Adjust grazing periods and/or stocking rates to meet the desired objectives for the plant communities and the associated resources, including the grazing animal. Schedule livestock movements based on rate of plant growth, available forage, and utilization, not calendar dates.

Periodic rest from grazing may be needed to maintain or restore the desired plant community following episodic events, such as wildfire or severe drought. {See Prescribed Grazing (528) Fact Sheet and Prescribed Grazing (528) Technical Note for additional information.}

Additional Criteria to Improve or Maintain Quantity and Quality of Forage for Livestock Health and Productivity

Plan grazing to match forage quantity and quality with goals of the livestock producer. Use graze.xls to achieve forage livestock balance. Maintain livestock at a five or better body condition score (Table 2 and 3). See Prescribed Grazing (528) Technical Note for additional information.

Additional Criteria to Improve or Maintain Water Quality and Quantity

Maintain adequate ground cover and plant density to maintain or improve filtering capacity of the vegetation.

Minimize concentrated livestock areas to enhance nutrient distribution and improve or maintain ground cover. Discourage loafing of livestock around watercourses.

Minimize shade around limited access points. Do not graze riparian areas when soils are saturated. Graze only in times when vegetation will recover. Using riparian vegetation for creep grazing of lighter weight calves causes the least impact on vegetation.

Exclude livestock or practice short duration grazing of paddocks adjacent to or including streams. Rotate livestock before significant paths develop. Maintain introduced forages between a height of three and eight inches or greater.

Manage livestock for uniform deposition of urine and fecal material in areas away from sensitive water areas. Place other facilities away from sensitive areas.

Ensure optimum water infiltration by preventing compaction and reduce evaporation by maintaining plant cover.

Construct watering systems according to the Pipeline (516) Standard and Watering Facility (614) Standard or Watering Facility (614) Fact Sheet (TN-ENG-614).

Additional Criteria for Soil Erosion and Condition

Maintain adequate ground cover, litter, and canopy to maintain or improve infiltration and soil condition.

Minimize concentrated livestock areas, trailing, and trampling to reduce soil compaction, excess runoff, and erosion.

When crop residues are present, if desired, graze them soon after harvest of grain for the highest quality and lowest toxicity (e.g., aflatoxin). Grazing crop residues removes nutrients for next year's crop and leaves the soil more vulnerable to soil erosion. Leave adequate residue on the surface for soil protection. Typically, 50 percent or more of the soil surface should be covered with residue after grazing.

Locate fences to discourage erosion on slopes. Manage cattle to prevent paths through rotational grazing, vegetation management, and/or proper location of fences, gates, and facilities (hay feeding, mineral, water points, etc.).

Where appropriate, install dips or diversions to decrease concentrated flow on erosion-prone areas.

Protect streambanks from erosion.

Additional Criteria to Improve or Maintain Food and/or Cover for Wildlife Species of Concern

Manage for diverse plant communities. Manage plant height, structure, and density for desired wildlife habitat.

Provide rest from grazing or practice low density grazing during the critical nesting periods, April 15 through August 15.

Consider use of native warm season grasses in your grazing system. Maintain a higher stubble height during the winter for wildlife cover.

Additional Criteria to Promote Economic Stability through Grazingland Sustainability

Evaluate the economics of the forage system and associated infrastructure.

Develop a grazing system that provides forage for as much of the year as possible to minimize supplemental feed cost.

Develop a contingency plan to ensure resource management and economic feasibility without resource degradation.

Reduce the loss of livestock from toxic and poisonous plants.

CONSIDERATIONS

Utilization or stubble height target levels are tools that can be used in conjunction with monitoring to help ensure that resource conservation and producer objectives are met.

When needed, rest areas for a period of time to ensure the success of prescribed fire, brush control, seeding, or other conservation practices.

Resting overgrazed forages and using them for hay will expedite their recovery. Clipping rested fields for hay can aid in reducing expense of mowing. Typically, a 30-day rest is needed to produce enough forage to justify cost of harvesting for hay. Where practical, start the grazing sequence in a different management unit each growing season.

When weeds are a significant problem, prescribed grazing should be implemented in conjunction with pest management to protect desired plant communities. Control weeds before harvesting fields for hay or feed hay in the same fields hay was harvested from.

Livestock feeding, handling, and watering facilities should be designed and installed in a manner to improve and/or maintain animal distribution. These facilities should also be designed and installed to minimize stress, the spread of disease, parasites, contact with harmful organisms, and toxic plants.

Supplemental feed and/or mineral requirements should be balanced with the forage consumption to meet the desired nutritional level for the kind and class of grazing livestock.

Prescribed grazing should consider the needs of other enterprises using the same land, such as wildlife and recreational uses.

Single trees for shade can be lightning attractants that can be hazardous to livestock.

Feed supplements under the hot wire to eliminate cost of feeding troughs. Feed in a new location each feeding.

PLANS AND SPECIFICATIONS

The prescribed grazing plan shall conform to all applicable federal, state, and local laws. Seek measures to avoid adverse effects to endangered, threatened, candidate species, and their habitats.

Prepare a prescribed grazing plan for all management units where grazing will occur. This practice can be applied on the whole operating unit or a portion of it.

Guidelines for developing a prescribed grazing plan (recommended location) include:

1. **Goals and Objectives** of the producer clearly stated. {TN-CPA-25}

2. **Resource Inventory** (i.e., Resource condition, existing structures, facilities, and

soil.) (TN-CPA-25, plan map, soils map, and graze.xls.)

3. **Forage Inventory** of the expected forage quality, quantity, and species of forage in each management unit(s) during the grazing period (graze.xls).

4. **Forage-Animal Balance** developed as a sustainable grazing plan for the management unit(s), which ensures forage produced or available meets forage demand of livestock and/or wildlife of concern. Balance the monthly livestock demand with the cumulative quantity of forage produced or brought in (graze.xls).

5. **Grazing Plan** developed for livestock that identifies periods of grazing, rest, and other treatment activities for each management unit (graze.xls, plan narrative).

6. **Contingency Plan** developed that details potential problems (i.e., severe drought, flooding) and serves as a guide for adjusting the grazing prescription to ensure resource management and economic feasibility without resource degradation. (See operation and maintenance section for additional information addressing contingency plans, graze.xls, plan narrative.)

7. **Monitoring Plan** developed with appropriate records to assess whether the grazing strategy is meeting objectives. Identify the key areas and key plants that the manager should evaluate in making grazing management decisions. An example of key areas would be riparian area or concentrated animal areas, and plants might be orchardgrass or legumes in a tall fescue mixed pasture (plan narrative).

OPERATION AND MAINTENANCE

OPERATION

Prescribed Grazing will be applied on a continuing basis throughout the occupation period of all grazing units.

Adjustments will be made as needed to ensure that the goals and objectives of the prescribed grazing strategy are met.

A producer may need to graze one pasture close (sacrifice one paddock) to protect other pastures from being overgrazed, to aid in maintenance of legumes, to control weeds or provide high quality forage at a later date.

At any one time, no more than 20 percent of the total grazing acreage should be grazed lower than the heights listed to terminate grazing (Table 1).

Options to protect forage heights include, but are not limited to:

- Feeding hay or other supplemental feed.
- Reducing the number of animals “destocking.”
- Leasing additional pasture, fertilizing when moisture is available or seeding annuals, etc.

MAINTENANCE

All facilitating practices (i.e., Fence, Watering Facilities, and Pest Management) needed to affect adequate grazing distribution as planned by this practice standard will be maintained in good working order.

Table 1: MAINTAIN FORAGES IN A VEGETATIVE STATE[1]
"Maintaining Proper Forage Height is of Utmost Importance"

Forage Species[4]	Height to Begin Grazing[2]	Height to Terminate Grazing (Residual Ht.) [3]	Recovery Time (Days)
Tall Fescue Timothy Annual Ryegrass Crabgrass Old World Bluestem	5-8"	(2) 3"	14-45
Tall Fescue (Endophyte Free) Orchardgrass Sericea Lespedeza	5-8"	(3) 4"	14-45
Wheat Rye Oats	5-8"	(3) 4"	14-45
Alfalfa	12-15"	2"	24-32
Pearl Millet	12"	4-8"	14-30
Sorghum X			
Sudangrass Hybrids	18"	4-8"	14-30
Johsongrass Native Warm Season Grasses (NWSG)	12-18"	6-8"	30-50
Common Bermudagrass Hybrid Bermudagrass	4-8" 5-8"	2" 3"	14-45

[1] Grazing periods generally need to be short 1 to 14 days with 14 to 21 days of recovery during optimum growing season and 21 to 45 days or longer during periods of less than optimum conditions.

[2] Height to begin grazing is important to assure adequate quantity is available and plant recovery is sufficient to maintain a healthy stand. Paddocks may be grazed at the listed lower height realizing that quantity of forage produced and presented to the animal and plant vigor will be reduced. The grazing and recovery period needed for forages varies according to growing conditions.

[3] Minimum grazing height listed in () may be used when rotational grazing (days on a particular field are 14 days or less) is practiced and the minimum or higher recovery height to begin grazing is practiced. When determining height to terminate grazing, use the average height of 80 percent or more of the desirable forage.

[4] Alfalfa, bermudagrass, Old World bluestem, and sericea should be at least 6" to 8" tall prior to the first frost. Johnsongrass and NWSG should be at least 12" tall prior to the first frost. Providing other forages with a recovery period prior to frost is also beneficial to forage vigor.

TABLE 2: DESCRIPTION OF BODY CONDITION SCORING (BCS) OF BEEF COWS

1.	**Severely emaciated**. Bone structure of shoulder, ribs, back, hooks, and pins is sharp to the touch and easily visible. Little evidence of fat deposits or muscling.
2.	**Emaciated**. Little evidence of fat deposition, but some muscling in the hindquarters. The backbone feels sharp to the touch.
3.	**Backbone easily visible**. Very thin, no fat on ribs or brisket, and some muscle still visible.
4.	**Backbone visible**. Thin with ribs easily visible, but shoulders and hindquarters still showing fair muscling.
5.	**Moderate to thin**. Last two or three ribs cannot be seen unless animal has been shrunk. Little evidence of fat in brisket, over ribs, or around tailhead.
6.	**Good smooth appearance throughout**. Some fat deposits in brisket and over tailhead. Ribs covered and back appears rounded.
7.	**Very good flesh, brisket full**. Fat cover is thick and spongy, and patchiness is likely. Ribs very smooth.
8.	**Square appearance**. Obese, back very square, brisket distended, heavy fat pockets around tailhead.
9.	**Rarely observed**. Very obese. Animal's mobility may actually be impaired by excessive fat.

TABLE 3: EFFECT OF BODY CONDITION SCORE AT CALVING ON PREGNANCY PERCENTAGE ON 90-DAY BREEDING SEASON

BODY CONDITION SCORE	PREGNANCY PERCENTAGE
4	50
5	81
6	88
7	90